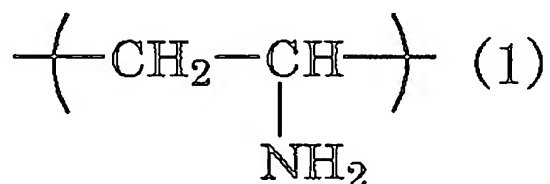
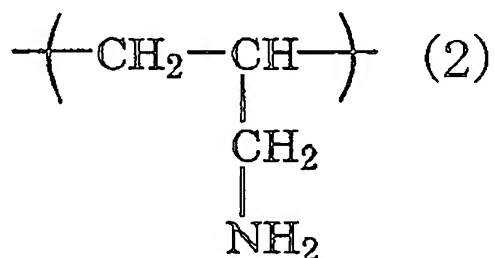


CLAIMS

1. A chemical conversion coating agent comprising:
 at least one kind selected from the group consisting of
 5 zirconium, titanium and hafnium;
 fluorine; and
 a water-soluble resin ,
 wherein said water-soluble resin has, in at least a part
 thereof, a constituent unit expressed by the chemical formula
 10 (1):



and/or the chemical formula (2):



2. The chemical conversion coating agent according to
 15 Claim 1,
 wherein the water-soluble resin is a polyvinylamine resin
 or a polyallylamine resin.
3. The chemical conversion coating agent according to
 20 Claim 1 or 2,
 wherein the water-soluble resin has a molecular weight

of 500 to 500000, and a content of the water-soluble resin in the chemical conversion coating agent is 5 to 5000 ppm.

5 4. The chemical conversion coating agent according to any of Claims 1 to 3, containing

1 to 5000 ppm of at least one kind of a chemical conversion reaction accelerator selected from the group consisting of nitrite ion, nitro group-containing compounds, hydroxylamine sulfate, persulfate ion, sulfite ion, hyposulfite ion, peroxides, 10 iron (III) ion, citric acid iron compounds, bromate ion, perchlorinate ion, chlorate ion, chlorite ion, as well as ascorbic acid, citric acid, tartaric acid, malonic acid, succinic acid and salts thereof.

15 5. The chemical conversion coating agent according to any of Claims 1 to 4,

wherein the at least one kind selected from the group consisting of zirconium, titanium and hafnium has a content of 20 to 10000 ppm in terms of metal, and the chemical conversion 20 coating agent has a pH of 1.5 to 6.5.

25 6. A surface-treated metal comprising a chemical conversion coat formed by the chemical conversion coating agent according to any of Claims 1 to 5.

7. The surface-treated metal according to Claim 6, wherein the chemical conversion coat has a coat amount of 0.1 to 500 mg/m² in a total amount of metals contained in the chemical conversion coating agent.

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